PEER REVIEW REPORT

United Kingdom

2013

Building resilience to disasters:
Assessing the implementation of
the Hyogo Framework for Action (2005-2015)

UNISDR
The United Nations Office for Disaster Risk Reduction

European Commission

OECD
BETTER POLICIES FOR BETTER LIVES

PEER REVIEW REPORT

United Kingdom

2013

Building resilience to disasters:
Assessing the implementation of
the Hyogo Framework for Action (2005-2015)

UNISDR
The United Nations Office for Disaster Risk Reduction

European Commission

OECD
BETTER POLICIES FOR BETTER LIVES

Citation
2013 United Kingdom Peer Review - Building resilience to disasters: Implementation of the Hyogo Framework for Action (2005-2015), UNISDR, EC, OECD.

Acknowledgements

The peer review team was composed of peers from three Member States: Taito Vainio (Finnish Ministry of the Interior, Senior Officer in the Department for Rescue Services), Anna Hedenström (Geological Survey of Sweden, Head of Division Applied Geology), and Luca Rossi (Italian Civil Protection Department, Civil Protection and Environmental Engineer). A joint Secretariat, providing guidance and support to the peers in carrying out their tasks, was formed by Stefanie Dannenmann-Di Palma (UNISDR Europe, Programme Officer), Thomas de Lannoy and Yordanka Mincheva (Disaster Risk Reduction Policy Officers from the European Commission, DG Humanitarian Aid and Civil Protection), and Charles Baubion (OECD, Risk Management Policy Analyst). The report benefitted from comments from Paola Albrito (UNISDR Europe), Ian Clark (European Commission), and Stephane Jacobzone and Jack Radisch (OECD).

The peer review benefitted greatly from the contributions of all interviewed stakeholders and their cooperation in gathering the data and information for this project. It could not have been achieved without the full commitment of the UK's Civil Contingencies Secretariat, in particular Steven Barnes, who triggered the UK to volunteer to undertake this peer review and coordinated the development of the peers' agenda.

The peer review has been carried out with financial support from the European Commission, and with an in-kind contribution from UNISDR Europe and the OECD High Level Risk Forum, and the dedicated time and expertise of the peers.

The cover photos have been provided by the UK Environment Agency.

Table of Contents

Introduction

This report presents the first peer review undertaken to assess progress in the implementation at national level of the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters (HFA). Under the HFA, Member States of the United Nations have committed to policy action. This report takes advantage of a policy exchange among peers, as a governance tool, to facilitate the exchange of best practices, examining the performance of the 'reviewed country' in a rigorous and consistent framework. The peer review process helps to strengthen mutual understanding and trust in the results based on exchange of experiences and non-binding recommendations aimed at policy improvement.

This review represents a major contribution to the HFA process. Since May 2008, designated national authority/HFA focal points have reported on progress on HFA implementation, generated through a multi-stakeholder review process. Since the adoption of the framework in 2005, the information submitted by the countries was derived purely from self-assessment, and had not been subject to a process of validation among peers. The current review offers the advantage of helping to strengthen the quality of the information, offering a thorough and shared assessment of national strategies.

The United Kingdom volunteered to be the first country to undertake such a peer review, with the overall objectives to :

- enhance the effective implementation of and reporting on the HFA, contributing to improved policy-making on disaster risk reduction (DRR) through external assessment and mutual learning;
- increase the consistency between the national disaster risk reduction policies and stimulate transferability of good and innovative practices;
- contribute to developing and implementing EU policy initiatives that could further advance the implementation of the HFA in EU Member States as well as in neighbouring countries;
- encourage awareness-raising through broad involvement of stakeholders in the review process and wide dissemination of the results;
- foster policy dialogue in Europe and enhance regional cooperation between countries exposed to common hazards and risks.

This pilot review was developed through a full collaboration between the European Commission, UNISDR, and OECD through its High Level Risk Forum. The team has benefited from OECD's guidance and experience in conducting peer reviews in disaster risk management policies.

It is the hope of the authors of this review that it could be of broader relevance. While some of the findings of this review are specific to the UK institutional frameworks, it may help countries in the EU and beyond to reflect and strengthen the implementation of risk management policies, contributing to stronger resilience of nations and communities, and helping to promote better lives. The review can also help to sustain a broader policy dialogue on these issues, engaging with local governments and the private sector.

Review Process

This report contains findings from the UK HFA Peer Review mission, which was carried out from 17-26 September 2012 and aimed to: 1) establish state-of-the-art approaches to each of the HFA Priorities for Action; 2) identify good practices and shortcomings/areas needing improvement; and 3) develop recommendations to achieve further progress. The five HFA Priorities for Action and the EU disaster risk management policy are strongly linked and their deeper review will allow for closer integration between these instruments and an assessment of the impacts of relevant EU policies and actions at national level that contribute to the implementation of the HFA.

To gather the necessary information, more than 90 stakeholders were interviewed from 48 stakeholder organisations, including central and local governmental authorities and agencies, non-governmental organisations (NGOs), volunteer organisations, academia and businesses (see Annex A for the complete list). The interview panels took place in London (including with stakeholders and local responders from England and teleconferences with devolved administrations from Scotland and Wales) and during two field visits to Bristol (the UK Environment Agency) and Exeter (the UK Met Office and the Flood Forecasting Centre).

From report to action: Follow-up to the UK peer review report

This report is intended to help the UK assess the implementation of the HFA at national level and undertake, if necessary, any specific actions or measures to respond to the identified areas for improvement and the related recommendations.

It is intended to be presented at the Global Platform for Disaster Risk Reduction (21-23 May, 2013 Geneva) and other international and European forums (for example, the European Civil Protection Forum, 15-16 May, 2013, European Forum for Disaster Risk Reduction, 23-26 September 2013) with the objective to promote the peer reviews as an effective tool for exchanging experience between countries in disaster risk management and monitoring the implementation of agreed commitments. The development of such monitoring tools could be reinforced and included as part of a post-2015 Hyogo Framework for Action and within the further development of EU cooperation in disaster management.

The report shall also contribute to the European and international disaster risk reduction knowledge-base as a tool for analysing trends in national policy developments and the possibility of knowledge sharing for identified good practices.

Key findings, assessment and recommendations

The first general finding that arises from the analysis of the UK disaster risk reduction management strategy confirms that the UK has achieved a high level of preparedness, which helps national and regional authorities to respond to a variety of disruptive challenges and provide an effective and coordinated crisis-management response.

Since the Civil Contingencies Act (CCA) was enacted in 2004, the UK has continued to increase the resilience of society to disasters. Sophisticated mechanisms have been put in place to coordinate the actions of various levels of government and its agencies at national and local levels. The authorities at all levels have an understanding of the medium-term risks that they face as well as the ability to identify emerging risks over the shorter and medium-long terms. Plans and capabilities are in place at all levels for those risks assessed by policy-makers to warrant separate and dedicated planning.

In many respects, the UK resilience approach shows state-of-the-art innovations, including :

- large use of science to support policy;
- attention to business-continuity issues and full partnerships with the private sector;
- flexible institutional mechanisms and partnerships focused on delivery through voluntary approaches;
- professional and dedicated co-workers in the field of DRR throughout the country;
- national commitment to continue improving policy-making and pushing further implementation.

While the UK deserves much praise for these achievements, a few areas still leave scope for improvement in terms of the five HFA Priorities for Action to improve resilience to disasters. For example, a new momentum should enlarge the focus of the UK resilience approach from emergency preparedness and response towards more prevention and vulnerability reduction. In particular, risks with potentially large impacts and high likelihoods, especially when these are growing, could be better managed through vulnerability reduction than through preparing and responding to the event. Floods and droughts are examples of the types of risks that may require more long-term, whole-of-society approaches to their reduction, as climate change may have an impact on those in the future.

Main Recommendations

HFA Priority 1 : Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.

The UK could set up systems to monitor the implementation of national guidelines at local level, and to gather feedback on the guidelines. It would help to better assess results across areas, highlighting best practice and helping to focus resources where they are most needed. A regulatory framework could help support volunteer organisations as part of the local resilience forum (LRF). Finally, the Natural Hazard Partnership (NHP) could be further developed and linked to the national disaster risk reduction platform.

HFA Priority 2 : Identify, assess and monitor disaster risks and enhance early warning

Risk assessment should include risk and vulnerability reduction (for example, land-use planning) besides capabilities-based and emergency planning. A disaster loss database would help to assess the outcome of prevention through cost-benefit analysis. Clarifying the roles and responsibilities of the agencies involved in early warning systems would help strengthen and coordinate the emergency response. A web-based real-time data-sharing system among agencies should be developed. The outcomes of the risk assessment could be used more to educate the public on understanding uncertainties and taking warnings seriously, particularly at local level. A web-based system for real-time data-sharing among technical agencies should be further developed and its use promoted.

HFA Priority 3 : Use knowledge, innovation and education to build a culture of safety and resilience at all levels

The existing platforms for exchange of information should be connected and turned into practical tools for all disaster risk reduction stakeholders Additional dissemination of information to the public would help to strengthen not only preparedness but also prevention. This should promote the use of new technology as well as fostering regulations outlining individuals', companies' and other organisations' roles and responsibilities with respect to risk management. Specific efforts should be made with respect to children as a means of informing parents, households and the wider public, as well as with strengthening awareness among vulnerable groups and tourists in flood-prone areas. There should be partnerships with the international scientific community and the sharing of advancements in science and risk modelling with other countries, particularly for emerging risks. Systematic consultation and engagement with all individuals and stakeholders would also help policy design.

HFA Priority 4 : Reducing underlying risk factors

The partnership between central and local governments through the Civil Contingencies Act and the local resilience forums could be expanded to include vulnerability reduction, besides emergency planning and business continuity. The LRFs could become the main platform for adapting to climate change, facilitating greater coherence and synergies between risk prevention and emergency preparedness and response. In the context of climate change, drought-disaster-management policy will be needed. Seismic risks can be further addressed through improved building codes. It is particularly important to include the outcome of risk assessment into land-use planning at local level, with mandatory regulations to avoid vulnerability creep at local level through inappropriate planning. Greater take up of insurance by low-income individuals and households would also help.

HFA Priority 5 : Strengthen disaster preparedness for effective response at all levels

Additional capacity building and financial resources will be required to enhance risk management planning, with greater multi-agency cooperation and cross-sectoral planning frameworks. Drills for high-impact, low-probability events should be developed where the existing emergency response system is tested in practice, with a systematic assessment of sectoral resilience plans and greater contingency planning and exchange of information with neighbouring countries. Contacts between LRFs and voluntary organisations should be strengthened. There is a need for a systematic assessment of the implementation of the recommendations on lessons learnt and exercises/reviews, involving all levels of government and stakeholders. The general public should be encouraged to participate actively in community resilience work.

HFA Priority 1: Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation

A highly performing national policy and legal framework for disaster risk reduction

HFA Core Indicator 1.1 :
National policy and legal framework for disaster risk reduction exists with decentralised responsibilities and capacities at all levels

The UK's national policy and legal framework for disaster risk reduction is called the Civil Contingencies Act. It came into effect in 2004, with implementation starting in 2005. The Act, defining the rules and tasks of all stakeholders involved in disaster risk reduction, is separated into two substantive parts: the first focuses on local arrangements for civil protection, establishing a statutory framework of roles and responsibilities for local responders, and the second focuses on emergency powers.

Part 1 of the Act was put into force in November 2005. Business-continuity management started in 2006 and required local authorities to provide advice and assistance to businesses and voluntary organisations. Part 2 of the Act updates the 1920 Emergency Powers Act. The update takes into consideration the current and future risk profile, but also allows for the making of temporary special legislations. Part 2 of the Act is considered the option of last resort and shall be applied only in exceptional circumstances.

After several years of testing this approach, a review of the Act called the 'enhancement programme' took place in early 2012 and made recommendations to strengthen cooperation and information sharing among emergency-management stakeholders. During the peer review, interviewees reiterated that the general approach adopted by the British Government in 2004 fits well both the UK political and cultural frameworks.

In 2008, the UK agreed upon the Climate Change Act 2008. This is a legally-binding, long-term framework to cut greenhouse-gas emissions and build a framework for the UK's ability to adapt to a changing climate. The Climate Change Act 2008 requires a UK-wide climate change risk assessment (CCRA) every five years, a National Adaptation Programme (NAP) and Adaptation Reporting Powers (which enable the Secretary of State to direct 'reporting authorities' to prepare climate change adaptation reports).

The Civil Contingencies Secretariat (CCS), established in 2001, is one of the main drivers of change on disaster risk reduction policy and supported the development of the Civil Contingencies Act. It was established after serious incidents − including severe flooding, the fuel crisis in 2000, and the Foot-and-Mouth disease outbreak in 2001 − exposed deficiencies in existing UK arrangements. The CCS is in charge of implementing the CCA, conducting the National Risk Assessment (NRA), coordinating the action of the Government, providing guidance to local resilience forums, organising partnerships with the private sector and the voluntary sector and co-ordinating the central government response to events when they occur.

The local resilience forum is a multi-agency partnership made up of representatives from local public services, including the blue-light emergency services, local authorities, the National Health Service (NHS), the Environment Agency (EA) and other partners (Category 1 Responders, as defined by the Civil Contingencies Act). The LRF is also supported by organisations (Category 2 responders), such as the Highways Agency, transport operators in England only and the public utility companies, which have a responsibility to co-operate with Category 1 organisations and to share relevant information with the LRF. The LRF identifies potential risks and produces emergency plans to either prevent or mitigate the impact of localised catastrophic emergencies. There are 38 LRFs in England and four in Wales. A particularly interesting example of an innovative institutional partnership at local level is the Lincolnshire Programme For Change, which deals with coastal flooding (see Priority 5).

The Resilience and Emergencies Division (RED) within the Department of Communities and Local Government (DCLG) is responsible for coordinating from national to local level in England. The DCLG acts as a link to ensure that national policies are considered by the LRFs. One role of RED is to distribute information between the LRFs in order for them to be able to compare risks and actions. RED has attached to each of the 38 LRF in England national resilience advisors. RED uses a range of communication tools including the bi-annual LRF conference, co-chaired by DCLG and the Civil Contingencies Secretariat, which provides a good opportunity for information sharing and discussion. RED works in partnership with local resilience forums, the CCS, other government departments and agencies to enable resilient localities, and ensure preparedness for high-impact and wide-area emergencies where the impact is likely to extend beyond the capacity of a single LRF.

Furthermore, since its establishment in 2011 RED has worked with LRFs to broaden their horizons on risk governance by facilitating discussion and co-operation, for example through cross-LRF risk discussions, and conferences on specific issues of common interest, such as reservoirs. This work continues, and some significant progress appears to be being made, for example through LRFs' co-operation on identifying and addressing risks that might occur in one LRF area while potentially impacting other LRF areas.

Cross-government coordination is required with higher-level emergencies. In these circumstances, the Cabinet Office and the lead government department, in consultation with the Prime Minister's Office, can activate the Cabinet Office Briefing Rooms (COBR) – for response, recovery or both. COBR also operates in case of international events. The very high level of these constellations ensures that the decisions made will be implemented.

Disaster Risk Reduction Resources

HFA Core Indicator 1.2 : Dedicated and adequate resources are available to implement disaster risk reduction activities at all administrative levels

There is no concrete and comprehensive estimation of the budget allocated to disaster risk reduction activities. Each governmental department 'owns' the responsibility for a specific risk and has to deal with this risk within its own given budget. Consequently, the UK uses a variety of budget resources. Stakeholders have been able to use efficiently the current budget to implement the most important activities. Although recent budgetary cuts are putting a strain on the system and affecting disaster risk reduction policy, it is not as much as in other areas. The Government and the stakeholders try to compensate for the reductions with additional cost-efficiency gains, and savings are sought.

The LRF remains the local-level focus on risk governance. It does not receive direct support from the central budget and relies instead on funding from its members, which include responders that receive government funding for their normal statutory activities.

Community participation and resources at local levels

HFA Core Indicator 1.3 : Community participation and decentralization are ensured through the delegation of authority and resources to local levels

The disaster risk reduction policy sets highly decentralised responsibilities and capacities. This approach takes into consideration the strong autonomy of communities and stakeholder groups. In fact, communities adapt the national guidelines, provided by the central government, in order to define and rank disruptive and unacceptable events according to their own perception. They mostly refer to local responder authorities and rely on local resources to cope with these events. Only in cases where local capacities are overstretched is the subsidiary assistance of the national authority or neighbouring areas or countries requested.

The highly decentralised system aims to improve the participation of local communities, and at the same time meet, as far as possible, the expectations of citizens.

In 2010, the Government undertook a profound administrative reform in England to abolish the regional level of administration, through regional government offices. This reform was felt to be creating additional burdens and constraints on local responders and certain gaps in the capacities and the chain of communication between local and central authorities. A number of government agencies do, however, continue to operate on a regional basis, for example the Environment Agency.

The Civil Contingencies Act applies to the whole of the UK and reflects the various devolution settlements. The devolved governments of Wales and Scotland are linked with the Cabinet Office in terms of the responsibilities and organisation of disaster risk reduction. While civil protection is not devolved in Wales, the Welsh Government plays a leadership and co-ordination role with emergency responders and links in with CCS on building capabilities and resilience on a national level. During emergencies affecting Wales, the Welsh Government co-ordinates the response and is represented at COBR by the First Minister for Wales. Civil protection is largely devolved to Scotland.

The collaboration between the devolved governments is operating well, with known and clear chains of action and decisions. One example mentioned was the preparedness with respect to nuclear power plants, of which two are located in an area affecting LRFs in both England and Wales. Although the risks are shared, the finances dedicated to response

planning are provided from local budgets.

National multi-sectoral platform for disaster risk reduction

HFA Core Indicator 1.4 : A national multi-sectoral platform for disaster risk reduction is functioning

The national platform in the UK is led by the Civil Contingencies Secretariat and is located at the Cabinet Office. The CCS, reporting to the Prime Minister-chaired National Security Council, performs some of the functions of a national platform. Representatives from 30 government departments and secretariats, having responsibility for all risks affecting the UK, meet on a quarterly basis. Ministerial agreements are developed based on the decisions made at the meetings.

A multi-sectoral platform to coordinate activities aiming at resilience is in place both at national and local levels. At national level it sits on the National Security Council, which is chaired by the Civil Contingencies Secretariat, along with many other stakeholders, such as the Scientific Advisory Group in Emergencies (SAGE). At a local level the coordination function lies within the LRF, governmental representatives and other public, voluntary and private organizations.

The following specific coordination mechanisms have been developed with various stakeholders :

1. *Science :* The UK Met Office has promoted the establishment of the Natural Hazard Partnership, which is a collaborative partnership between 12 technical and scientific agencies to work together effectively in order to provide society with information research and analysis of natural hazards (see Priority 2).
2. *Volunteers :* Although there is no legal basis for community and voluntary organisations to work on disaster risk reduction, the voluntary sector plays an important role in supporting the statutory services in response to many emergencies where Category 1 responders 'have regard' to the activities of certain voluntary organisations in the course of carrying out their emergency and business-continuity planning duties. NGOs and other volunteer organisations are not formally engaged in the LRF, but in some cases they do work together. A large number of NGOs communicate with the CCS through the Voluntary Sector Civil Protection Forum and its Working Party and Annual Forum, which was co-convened by the Civil Contingencies Secretariat and the British Red Cross − and is chaired by the British Red Cross. UK-based NGOs are engaged in international disaster risk reduction activities. Unfortunately, it appears that those internationally engaged NGOs have little knowledge of the good practices undertaken in the UK and are therefore unable to share these in developing countries.
3. *Business :* There is strong support from utility companies and business associations for the Government's policy on Business Resilience. The forum for public-private cooperation is the Business Advisory Group on Civil Protection, which is attached to the CCS. Furthermore, there is a strong connection to a number of sector-specific forums (for example, E3C for energy and gas) where government representatives and business meet regularly and cooperate closely in the regulation of the industries.

Assessment and recommendations on HFA Priority 1

This general assessment on HFA Priority 1 builds on the specific findings for the relevant HFA core indicators. It highlights good practices that were identified in the United Kingdom and may be shared with other countries. It also discusses areas for improvement, leading to the formulation of three core recommendations, highlighted below.

Good practices

The United Kingdom has a strong legal and regulatory framework in the area as the Civil Contingencies Act provides the relevant legal and institutional setting to address disaster risk management needs at national and local levels.

The establishment of the local resilience forums is a very good practice and is essential in order to get all the necessary stakeholders involved in the process at local level.

The Government-sponsored bi-annual local resilience forum conferences, and other workshops on specific risks and capabilities, provide opportunities to engage with stakeholders and for expert discussions, gathering analyses and disseminating accurate and consistent messages both to responders and the general public.

The Natural Hazard Partnership appears to be a well-functioning and coordinated mechanism that provides information, research and analysis on natural hazards for the development of more effective communications and services for civil contingencies, governments and the responder community across the UK.

Areas for improvement

The Cabinet Office Civil Contingencies Secretariat plays a pivotal role in HFA implementation and reporting through the HFA Self-Assessment Report, with a focus mainly on England. A more joined up approach involving all relevant UK agencies, including Wales, Scotland and Northern Ireland, would help to reflect a whole-of-government approach to disaster risk reduction.

The system would benefit from improved coordination between prevention, preparedness and response, but this also reflects the fact that the Civil Contingencies Act focuses on preparedness and capacity to adapt to events.

Due to the devolved administration system, risk governance is mainly confined within the boundaries of the local resilience forums and makes cooperation more difficult if needed in case of trans-boundary issues. On-going efforts by the Resilience and Emergencies Division within the Department of Communities and Local Government should, however, be highlighted.

A more consistent approach, in terms of resilience and exporting national good practices through international cooperation, could be achieved through improved coordination between the Civil Contingencies Secretariat and the Department for International Development (DFID).

Recommendations

The setting up of policy monitoring systems could be beneficial to:

- better figure out the implementation of national guidelines at local level;
- gather feedback on the effectiveness of the national guidelines;
- allow comparison among different areas over the country and highlight best practices to be proposed elsewhere;
- address resources (in terms of scientific research and funding) to areas which need it most.

Volunteer organisations could be further promoted and supported by an appropriate regulation that lays down the basis for the establishment of a nation-wide system of volunteering structures attached to local resilience forums with an organisational framework for cooperation.

The Natural Hazard Partnership should be further developed, with stronger links to the UK's National Platform for Disaster Risk Reduction.

HFA Priority 2 : Identify, assess and monitor disaster risks and enhance early warning

National risk assessment

HFA Core Indicator 2.1 : National and local risk assessments based on hazard data and vulnerability information are available and include risk assessments for key sectors

The UK is quite advanced in risk assessment. The National Risk Assessment is produced every year to identify all the major hazards and threats the UK should prepare for within a five-year horizon. With a multi-hazard approach, the NRA has adopted a multi-agency process to rank all the risks based on the likelihood and impact of the 'reasonable worst-case scenario'. This Civil Contingencies Secretariat-led process involves many government agencies, scientists and academics, as well as operators of critical infrastructures, and assesses vulnerabilities and possible cascading effects due to the detailed inter-connectedness of modern UK society. According to the Civil Contingencies Act, the NRA constitutes the fundamental basis for capabilities-based planning to support emergency preparedness and response from national to local level; the responsibility for each risk is 'owned' by one government department. This methodology has proven to be fairly successful to prepare for priority risks in a budget-constraint environment. For instance, in 2012 four priority risks were identified: pandemic influenza, coastal flooding, catastrophe terrorist attacks, and severe effusive (gas-rich) volcanic eruptions abroad. The risk of severe space weather was also one of the new risks assessed[1].

According to the Civil Contingencies Act, local resilience forums are responsible for local risk assessments. In addition to the NRA, the central government also provides guidelines on risk assessment that are updated annually for LRFs to conduct their own Community Risk Assessments (CRAs). These guidelines are not mandatory and there is no control/sanction mechanisms to ensure CRAs are done to set quality standards. Local communities adapt guidelines to their own realities, taking into consideration local priorities. The Lincolnshire Resilience Forum, for instance, has detailed the risk of east-coast flooding in its Community Risk Register. This includes detailed information on the hazard, exposure and related vulnerabilities.

Other governmental risk assessment processes are worth noting. They include the development of a national security risk assessment, which builds on the National Risk Assessment but extends the approach up to 20 years and prioritizes all major disruptive risks to UK national security, including overseas events. Another rather innovative initiative includes the Climate Change Risk Assessment, published in 2012 by the Department for Environment Food and Rural Affairs (DEFRA) − together with Scotland, Wales and Northern Ireland − which takes 2010, 2050 and 2080 as horizon timeframes. The UK Government Office for Science also leads a major project with non-government academics and experts advising the Government on high-impact, low-probability risks, and works with government and non-government stakeholders to improve the communication of science advice in emergencies. Its 'Foresight Project' also aims to provide a scientific outlook for the major risks the UK should prepare for in the future, together with the strategic vision of the scientific community on how to address them. The project uses a long-term perspective and identifies actions to be taken within the next 10 years in order to reduce the impacts of disasters arising from hazards up to 2040.

Monitoring and early warning systems

HFA Core Indicator 2.2 : Systems are in place to monitor, archive and disseminate data on key hazards and vulnerabilities

HFA Core Indicator 2.3 : Early warning systems are in place for all major hazards, with outreach to communities

Regarding hazard monitoring, forecasting and early warning systems, field visits at the UK Met Office and at the Environment Agency, as well as an interview with the British Geological Survey, demonstrated that these technical agencies have very advanced hazard-monitoring systems in place. Hazard information and databases are available for free to all citizens following the Government's open-data policy: the Freedom of Information Act and the Environmental Impact Regulations give any person the right to ask for and be given any information which is held by a public authority. For all the risks identified in the NRA, one governmental agency is in charge of hazard monitoring.

The Met Office is in charge of monitoring and forecasting weather events for the whole UK territory. While the Met Office network covers the whole territory, a specific system has been set up through the Internet for amateur meteorologists to upload their data, enriching the hydro-meteorological database. The Met Office develops Early Warnings for severe weather based on a risk matrix combining potential impact and probability of the hazard event. Colour-coded warning signals are then disseminated through the web, the media and social media, as well as to the emergency management authorities from national to local levels. In some cases the probabilistic information attached to the forecast is appreciated and used in the decision-making process. The forecasts are generally assessed as correct in around 66 per cent of cases. The Met Office regional advisors work in close coordination with LRFs during weather emergencies to provide them with the latest and

[1]2012 UK National Risk Register : http://www.cabinetoffice.gov.uk/sites/default/files/resources/CO_NationalRiskRegister_2012_acc.pdf

more precise information. Furthermore, the Met Office has also developed a web-based technical platform, called Met Office Hazard Management, to gather, analyse, visualize and exchange data among different stakeholders at central and local levels.

Partnerships with other agencies are crucial for other hazards, such as flooding or volcanic hazards. While the Environment Agency has the mandate of river and flood monitoring in England and Wales, the establishment of the Flood Forecasting Centre as a partnership between the Met Office and the Environment Agency has allowed more precise and accurate flood warning by combining hydrological and meteorological monitoring, forecasting and modelling. The Flood Forecasting Centre was set-up following a recommendation of the Pitt Review[2], which aimed to draw lessons after the massive floods in the summer of 2007. During the expert's visit to the Flood Forecasting Centre, a flood situation was under development: warning signals were updated regularly and communicated to the media and emergency managers with a clear symbology and colour-coding. As the Environment Agency is not mandated to work on river monitoring in Scotland and Northern Ireland, it should be noted that this partnership does not issue warnings for these regions. Another partnership between the Met Office and the British Geological Survey monitors the dispersion of volcanic ash and daze, as well as working on landslide risks.

The Health Protection Agency (HPA) collaborates with the Department of Health and the UK Met Office to publish the Cold Weather and Heatwave Plans for England. A component of both these plans is a Met Office-generated early warning related to cold weather and heatwaves, based on temperature thresholds. Health advice, actions and recommendations are linked to the alert system and targeted at health- and social-care professionals, voluntary and community groups, government and individuals. The HPA also monitors influenza pandemics and archives epidemiological and other data in databases that can support vulnerability analysis.

This idea of developing partnerships among technical agencies was further expanded through the Natural Hazard Partnership. The NHP is a collaborative partnership between 12 technical and scientific agencies[3] to work effectively together in order to provide society with information research and analysis of natural hazards. The NHP acts as a forum for exchange of data, information and outcomes of risk analysis. The NHP is also developing specific tools such as the Hazard Impact Model, which combines data and expertise from partners to identify areas and assets that are more vulnerable to a particular hazard. It aims also at developing a daily Early Warning bulletin, combining hazard information from the various technical agencies on flooding, geological hazards such as landslides, space weather, volcanic ash, weather and wildfires. The bulletin gives a five-day hazard summary report on on-going issues, as well as a general outlook for the next 30 days. The NHP currently meets every two months with the 100 per cent participation of each partnering agency. Since its creation, it has significantly increased the coordination among different stakeholders, avoiding duplication (which was previously an issue).

At the moment there is no mechanism for systematic collection and account of disaster data loss and damage. A disaster loss database is currently being discussed as being part of the NHP projects. This could potentially fill an existing gap.

Regional and international cooperation on risk assessment and early warning

HFA Core Indicator 2.4: National and local risk assessments take account of regional/trans-boundary risks, with a view to regional cooperation on risk reduction.

The UK is composed of England, Wales, Scotland and Northern Ireland. All four constituent countries exchange information and work closely together in the planning and preparedness phases.

Regarding some trans-boundary risks, i.e. coastal flooding and volcanic eruption, established international networks are in place for early warning systems and information exchange. There is also more informal cooperation at local level with France, Belgium and the Netherlands regarding the risk of storm surge and related coastal flooding. Following the volcanic eruption in Iceland (2009) (at that time not included in the risk assessment), the UK has put specific focus on preparing for volcanic eruptions and ash clouds through enhanced cooperation with Iceland.

At EU level, the UK is a participating country in the European Union Civil Protection Mechanism, which facilitates co-operation in civil protection between 32 European countries in order to improve the effectiveness of systems for preventing, preparing for and responding to disasters caused by natural or man-made hazards[4]. The UK's approach to risk assessment has contributed to the development of the EU Guidelines on risk assessment for disaster risk management, which the EU Member States are in the process of implementing[5].

The UK is also a member of the European Forum for Disaster Risk Reduction and shares its experiences within the European and global context.

[2]http://www.environment-agency.gov.uk/research/library/publications/33889.aspx

[3]Environment Agency, Flood Forecasting Centre, Health Protection Agency, Met Office, Natural Environment Research Council (NERC), NERC British Geological Survey, NERC Centre for Ecology and Hydrology, NERC National Centre for Atmospheric Science, NERC National Oceanography Centre, Ordnance Survey, Scottish Environment Protection Agency, UK Space Agency

[4]More information is available on http://ec.europa.eu/echo/policies/disaster_response/mechanism_en.htm

[5]More information is available on http://ec.europa.eu/echo/policies/prevention_preparedness/prevention_en.htm

Assessment and recommendations on HFA Priority 2

This general assessment on HFA Priority 2 builds on the specific findings for the relevant HFA core indicators. It highlights good practices that were identified in the United Kingdom and may be shared with other countries. It also discusses areas for improvement, leading to the formulation of five core recommendations, highlighted below.

Good practices

The UK National Risk Assessment helps support country-wide risk management, preparedness and planning with state-of-the-art techniques, including a multi-hazard approach, a five-year time horizon and frequent updates. It is very important that it is made available to the general public in the spirit of fostering open government.

The open-data approach of the UK government is effective for sharing information on hazards, vulnerabilities and risks with free and easy access.

The risk matrix, which combines potential impact and probability of the hazard event, provides an efficient approach to decide the level of warning according to the UK's Early Warning System.

The Flood Forecasting Centre delivers high-quality forecasts and early warnings as far as floods are concerned. The coupling of hydrologists and meteorologists is a sound and practical idea, involving the combination of the meteorological and hydrological sciences to achieve more precise information on the impact of different kinds of weather conditions.

The Natural Hazard Partnership reflects a promising technical and scientific venture to develop and provide more tools and inputs for risk assessment and early warning systems.

Areas for improvement

The risk assessment process is targeted mostly at emergency preparedness and planning, while it could also be used to reduce risks and vulnerability through territorial and sectoral planning at local level. Furthermore, evaluating and monitoring how risk assessment is conducted at local level would lead to improving the consistency in the risk analysis and mapping products across UK territory.

A better collection of data and information on vulnerability as well as disaster losses would allow the development of more comprehensive risk assessment and mapping.

While many improvements have been carried out to improve the coordination of early warning systems related to flooding, shortcomings still exist in the understanding of the messages by emergency responders. Confusion may also arise due to the administrative borders of the Environment Agency being different to those of the Met Office.

Recommendations

The risk assessment process in the UK could be further expanded in the UK to cover not only capabilities-based planning and emergency planning, but also risk and vulnerability reduction (for example, land-use planning).

A disaster loss database could be a valuable tool to evaluate prevention policies through cost-benefit analysis and reduced vulnerabilities.

Early warning systems would gain in clarity if the roles and responsibilities of the various technical agencies involved in this process were better unified throughout the country.

More could be done to educate the public on understanding uncertainties, while at the same time encouraging an understanding of hazards in particular localities and the importance of taking warnings seriously.

A web-based system for real-time data-sharing among technical agencies should be further developed and its use promoted, based on the model of the Met Office Hazard Management platform.

HFA Priority 3 : Use knowledge, innovation and education to build a culture of safety and resilience at all levels

Information sharing and dissemination

HFA Core Indicator 3.1 : Relevant information on disasters is available and accessible at all levels, to all stakeholders (through networks, development of information-sharing systems etc.).

The UK has developed a number of good mechanisms and practices for information sharing and risk communication. Under the Civil Contingencies Act, local responders have a legal obligation to make people aware of risks and establish appropriate warning and alerting arrangements. The national and local risk registers aim to ensure that there is scientific and risk information available to the general public and wider stakeholders at both national and local levels. They contain summary information from the national and local risk assessments as well as specific guidance towards communities and organisations regarding measures that should be undertaken to respond to these risks.

The Civil Contingencies Secretariat produces in addition a weekly Resilience Gateway bulletin, which disseminates among practitioners information on multi-agency civil protection issues, and provides a single co-ordinated channel of communication between central government and local responders. Specific actions to ensure effective risk communication are undertaken by a special mechanism for communication coordinated by the CCS, which is responsible for gathering, analysing and spreading accurate, targeted and consistent messages to both responders and the general public. The National Steering Committee on Warning & Informing the Public has also been established to support the CCS in improving the arrangements for warning the public of an imminent or actual threat of a disaster and to inform it of the appropriate action to take. The particular focuses of its work are Public Education, New Technology, Media Issues and Siren & Public Address systems. Several products are already available, including videos and quizzes. The CCS and the Met Office are using social media tools such as Facebook and twitter, which allow for timely and wide outreach to citizens and stakeholders.

Practitioners responsible for disaster risk reduction have at their disposal a number of web-based networks for information sharing. The most comprehensive is the National Resilience Extranet, which is managed by the CCS and provides a secure and resilient platform to share protectively marked documents and information between local and national partners. It also has the capability to host bespoke software allowing shared access to, for example, mapping and incident management systems. However, due to the sensitivity of the information it is not accessible to all businesses or science communities. The Natural Hazard Partnership consortium is also playing an important role in improving the quality of the information and enabling more coordinated and coherent scientific and technical advice for the Government and the resilience community.

Education and trainings aimed at specific stakeholders

HFA Core Indicator 3.2 : School curricula, education material and relevant trainings include disaster risk reduction and recovery concepts and practices

Education material is publically available through various media outlets such as television, radio, newspapers, booklets and the Internet to raise awareness about disaster risks and to advise people on how to prepare for and cope with the risks they may face. The Public Weather Service, for example, is transmitted across all media outlets. Televised campaigns include the 'What if' campaign and the 'Getting ready for winter' campaign. 'What if' is an interactive campaign where children and young adults can learn about various risks and how to deal with them. The Preparing for emergencies, what you need to know booklet is another useful information resource.

The Civil Contingencies Secretariat has also developed training and educational materials for specific stakeholders, and the media in particular. A series of joint courses and exercises with journalists have taken place which have contributed to building stronger and more effective cooperation between media and public authorities; all are very important for maintaining public trust.

As regards education, disaster risk reduction is not currently part of the national curriculum as a specific subject. However, teachers might cover some of these issues in subject areas such as personal, social, health and economic (PSHE) education. Alternatively, schools might cover them in assemblies – especially perhaps if an emergency were a serious possibility. While there is no obligation for schools to have emergency plans, the Department for Education expects schools to have sound procedures in place for safeguarding and keeping children and young people from harm and to

have a robust policy for dealing with emergencies. The Department provides emergency planning and health and safety advice to schools via its website.

One particularly successful and award-winning project is 'Developing Community Resilience through Schools', developed by Essex (and used by Nottinghamshire County Council and other partners across the UK). It is supported by the Resilience programme and involves 10 schools teaching children aged 6-11 about risks in their communities through fun activities (for example, external trips, sailing, visiting a flood barrier, poetry, music, dance and games, etc.).

Research, knowledge and innovation

HFA Core Indicator 3.3 : Research methods and tools for multi-risk assessments and cost-benefit analysis are developed and strengthened

Particularly impressive and advanced is the UK's approach for using knowledge and innovation in policy-making. Under the National Security Council, there is a Science and Technology Committee responsible for research, data gathering, analysis and research investments. At the governmental level, there is a Government Chief Scientific Advisor (GCSA), supported by the Government Office for Science (GO-Science), whose role is to ensure that all levels of government, including the Prime Minister and Cabinet, receive the best scientific advice possible, and to enable the many departments across government to create policies that are supported by strong evidence and robust scientific analysis. As of 2011, every individual government department also has its own departmental Chief Scientific Adviser (CSA), who works collectively with other analytical disciplines, departmental boards and ministers. The GCSA and the departmental CSAs consult regularly with each other at the Chief Scientific Adviser's Committee, a cross-departmental forum for the discussion of science issues. In August 2012, Southampton appointed the UK's first local authority Chief Scientific Advisor and it remains to be seen whether more local-level scientific advisors will be appointed in the future.

A Scientific Advisory Group in Emergencies, reporting directly to the Prime Minister, has been established in order to support the Civil Contingencies Secretariat and the 17 departments within different ministries. The Committee consists of the Chief Scientific Advisor, who reports directly to the Prime Minister, and 17 scientific advisors from 17 different ministerial departments. SAGE provides policy frameworks, general guidelines on risk assessment, disaster risk reduction and emergency management. Adaptation of the guidelines is demanded at local level, where knowledge of needs and resources available is better known. SAGE can only be activated by Cabinet Office Briefing Rooms in support of collective cross-government responses to and/or recoveries from Level 2 or 3 emergencies. SAGE aims to ensure that coordinated, timely scientific and/or technical advice is made available to decision makers to support UK cross-government decisions in COBR[6].

Public investments in research are also considerable. Each year the UK government supports the Science in Government department, which works on research and development programmes in areas such as climate change, energy, food and water, defence and security. The Foresight programme[7] in particular involves in-depth studies which look at major issues facing the UK in both the short (10-15 years) and long (20-80 years) term and focuses not only on social and economic impacts, but also drivers and indirect effects that are particularly difficult to characterize. GO-Science has published in addition a number of other interesting reports, looking into low-probability, high-impact risks (see Priority 2, above) and the use of science in humanitarian emergencies and disasters. The Health Protection Agency has also put a lot of effort into analysing the effects of climate change on health, and produced a report in 2012 entitled *The Health Effects of Climate Change in the UK 2012*[8], which provides scientific evidence of the wider risks to public health from climate change in the UK.

There are also many other research programmes and projects in partnership with academic institutions, councils and government departments. An example is Living with Environmental Change, an innovative partnership of 21 public-sector organisations that carry out environmental research and observations and currently run over 70 research programmes. Participation in various EU-funded research projects has also allowed exchange of valuable experience and joint initiatives with scientists from Europe, especially for multi-disciplinary studies that are not supported by the different UK research councils.

[6]http://www.cabinetoffice.gov.uk/sites/default/files/resources/sage-guidance.pdf
[7]http://www.bis.gov.uk/foresight/our-work/policy-futures/disasters/reports-documents
[8]http://www.hpa.org.uk/hecc2012

HFA Core Indicator 3.4 : Countrywide public awareness strategy exists to stimulate a culture of disaster resilience, with outreach to urban and rural communities

Public awareness strategies stimulate a culture of resilience with outreach to communities

The UK has undertaken significant efforts to work directly with citizens and increase the resilience of communities, although it still remains a challenge. In 2011, the UK Government adopted a Strategic National Framework on Community Resilience, which is intended to engage interest and facilitate discussion between public bodies, relevant voluntary-sector organisations, the private sector, and community and faith groups. Community resilience is undertaken mainly through the engagement of existing communities and civil-society networks (for example, women's organisations, NGOs, volunteers, scouts, or immigrant and religious communities) that act as local communicators. This work follows a flexible and non-prescriptive approach such as through the development of toolkits, guidance for local supporters, the dissemination of success stories, and the promotion of resilience championing (for example, through the development of a specific scout badge on resilience). In this regard, a knowledge hub for sharing good practice among communities, which is currently under development, would be particularly helpful.

Assessment and recommendations on HFA Priority 3

This general assessment on HFA Priority 3 builds on the specific findings for the relevant HFA core indicators. It highlights good practices that were identified in the United Kingdom and may be shared with other countries. It also discusses areas for improvement, leading to the formulation of five core recommendations, highlighted below.

Good practices

The national risk register and the education material available create public awareness about risks and also provide advice on how households, communities and local responders can respond to these risks.

The use of social media (for example, twitter and Facebook) facilitates innovative two-way communication with citizens at every stage of the communication process.

The Chief Scientific Advisor system used in the UK is very effective and provides high-level independent scientific advice to policy-makers. The emergence of a local-level advisor system is also a good sign.

Since its creation in 2008, the Community Resilience Programme has achieved promising results and is a good soft way of raising citizens' awareness through active engagement. The school project in Essex supported by the programme reflects good practice in educating children about risks at an early age, while at the same time engaging effectively a wider community, and parents in particular, by using children as effective communicators. Similarly, the information campaigns such as in the health sector help to disseminate information to the public. The campaigns on TV directed at children represent an interesting approach for building resilience.

The British Geological Survey citizen science programme promotes public engagement with science and research.

Areas for improvement

While efforts have been made, a complete data and information-sharing policy among stakeholders involved in disaster risk reduction still remains to be completed.

The public has access to a lot of information, but it is not clear whether people actually take action based on this risk information. It seems that despite the UK's efforts to strengthen resilience and develop an effective emergency system, citizens are not yet especially willing to take action themselves on the ground.

Despite efforts by the Government to educate and provide detailed information, changing people's behaviour and making individuals personally responsible remains a challenge: the culture of prevention and risk awareness is still seen as low (reportedly around 12 per cent among the general population).

Recommendations

The existing platforms for exchange of information should be connected and turned into practical tools for all stakeholders responsible for disaster risk reduction.

Additional means of disseminating information to the public and providing guidance on what measures should be taken, not only for preparedness but also risk prevention, should be developed. Potential examples include: use of new technology or adopting legislation outlining individuals', companies' and other organisations' roles and responsibilities with respect to risk management; and further engaging and educating children as a means of disseminating information to parents, households and the wider public.

Develop partnerships with the international scientific community and share with other countries advancements in science and risk modelling, for emerging risks such as space weather and risks with longer-term impacts (climate related, but also geological and biological).

Additional awareness strategies could specifically target vulnerable groups (for example, the elderly or homeless people) and tourists in flood-prone areas, as well as resilience campaigns well ahead of the expected disaster events. The campaign 'Get ready for winter' could be expanded to other risks.

In the planning and development of a disaster risk management system and related policies, a systematic mechanism to consult and involve actively all individuals and stakeholders could be established.

HFA Priority 4 : Reducing underlying risk factors

Disaster risk reduction and environment-related policies and plans

HFA Core Indicator 4.1 : Disaster risk reduction is an integral objective of environment-related policies and plans, including for land use, natural resource management and adaptation to climate change

While improving the resilience of UK society to disasters is central to the Civil Contingencies Act, the focus of the Act is mostly on emergency planning and response, and vulnerability reduction through business-continuity approaches, rather than hazard mitigation through structural and/or non-structural measures.

There are, however, other policies and initiatives related to the reduction of underlying risk factors.

The Climate Change Act of 2008, in addition to the climate change risk assessment process (see HFA Priority 2), requires a national adaptation programme, which must be put in place and reviewed every five years, setting out the Government's objectives, proposals and policies for responding to the risks identified in the CCRA. The NAP is currently being developed, based on the CCRA and with the following vision: "A society which makes timely, far-sighted and well-informed decisions to address the risks and opportunities posed by a changing climate". DEFRA is the lead department responsible for climate change adaptation, with the Environment Agency providing the Government's 'Climate Ready' support service within England. DEFRA and the Environment Agency are working to support local councils adapt to climate change and promote climate resilience within their local communities and businesses (for example, through the provision of adaptation tools, advice and climate projections). This support is undertaken in conjunction with partners such as the Local Government Association (LGA), Core Cities Group, and the Climate Change Partnerships (who work to communicate climate change information at local level and highlight climate risks and solutions). Councils are driving action themselves, an example being the LGA's 'Climate Local' initiative, where councils can sign-up and pledge action to address key local climate risks.

Other environmental policies conducted by DEFRA and the Environment Agency take disaster risk reduction into account. Water quality, waste management and chemical regulations are all key areas for risk prevention and reduction.

Social development policies and plans

HFA Core Indicator 4.2 : Social development policies and plans are being implemented to reduce the vulnerability of populations most at risk

Voluntary plans, including the use of risk-sharing mechanisms and insurance, are being used to reduce the vulnerability of populations at risk. Only for certain of the risks, in particular those involving the implementation of EU legislation (for example, flood- and drought-risk management, cross-border risks and animal diseases), does the central government exercise stricter control through its ability to provide obligatory instructions to local responders.

It is also a voluntary approach which prevails at the level of households and citizens, particularly through insurance. Insurance plays a key role in flood-risk management. While insurance is not mandatory for house owners, real-estate mortgages are delivered by the banks only if houses are covered by insurance. This is a powerful driver for the development of the insurance market in the UK. The Government has an agreement with the insurance industry, called the 'Statement of Principles', that commits insurers to continue to offer insurance to existing customers where they are at significant risk and where the Environment Agency has announced plans and notified the Association of British Insurers of its intention to reduce that risk within five years. The current agreement is due to end in 2013 and DEFRA is committed to ensuring that flood insurance remains widely available and affordable after this point. The insurance industry is committed to improving financial inclusion. Accordingly, via the Association of British Insurers, the industry has set up an Access to Insurance Working Group. Furthermore, the insurance companies perform their own risk assessments, such as flood-risk maps, in a more detailed scale than those published by the Met Office. Some companies provide their own open-access web-based map services. Customers simply enter their area codes to receive an evaluation of the risk of flooding.

Vulnerability reduction in the economic sector

HFA Core Indicator 4.3 : Economic and productive sectoral policies and plans have been implemented to reduce the vulnerability of economic activities

Regarding the resilience of the economy and the productive sector to disasters, a lot of emphasis is given to the business-continuity approach, as it is for critical infrastructure operators and service providers.

Most of these critical sectors (water, energy, transport and telecommunications, etc.) are managed by the private sector and regulated by the Government. Continuity of the service is often mandatory in the contractual arrangements, and companies have developed business-continuity planning accordingly and in alignment with the Civil Contingencies Act. The CCS has developed a Business Continuity Management Toolkit to help the commercial and voluntary sector implement Business Continuity Management Plans, but there is no system for monitoring their implementation.

Mutual Aid agreements have been developed among companies for most of the critical sectors to ensure continuity in case of an emergency.

Specific efforts to promote widely the notion of business continuity in the business sector have also been undertaken in the UK. Many companies have developed continuity plans in order to continue their activities or limit their vulnerabilities when a disaster happens, even though they don't have a statutory duty to do so. Many companies have signed a Memorandum of Understanding in order to help each other in times of emergencies. Advice is available on how to make continuity plans: the book Business Continuity for Dummies, developed by the Civil Contingencies Secretariat with the UK Business Continuity Institute and the UK Emergency Planning Society, is a good example. The goal of this publication is to give simple and clear advice on how businesses should plan to increase their resilience to disasters (only 5 per cent of the small and medium enterprises [SMEs] are reported to have Business Continuity Management Plans). Here again, the insurance sector took an active role in this initiative to show their costumers that having a business-continuity plan in place is good for business. Incentives for investments in prevention and risk management are also provided through various price-control mechanisms and licence conditions, which bring additional benefits to consumers without imposing administrative burdens or passing-on the costs to consumers. For example, 83 per cent of insurance companies also offer discounts to customers who adopt business-continuity plans.

Human settlements and disaster risk reduction

HFA Core Indicator 4.4 : Planning and management of human settlements incorporate disaster risk reduction elements, including enforcement of building codes

The responsibility for spatial planning is principally at local level. However, there is a weak linkage between local resilience forums, which focus mostly on emergency preparedness and response, and spatial planning (the Community Risk Assessment is not necessary utilised in spatial planning at local level). However, climate change, flooding and coastal change are issues to be considered in local planning. The government Department for Communities and Local Government issued the National Planning Policy Framework (NPPF) in March 2012, which planning authorities have to apply at local level in England. The Framework is clear that Local Plans should take account of climate change over the longer term, including factors such as flood risk, coastal change, water supply and changes to biodiversity and landscape. New development should be planned to avoid increased vulnerability to the range of impacts arising from climate change. The NPPF must be taken into account in the preparation of Local Plans and is a material consideration in planning decisions.

National planning also includes the development and maintenance of the 11,600 km of flood defences and 40,000 flood-control structures in the UK. These infrastructures are crucial, especially to protect the highly-populated British coastlines from the risk of coastal flooding, which is one of the major risks of the National Risk Assessment. The Environment Agency has a long-term investment programme to constantly renew and continue developing these infrastructures. It would consult with the local community about both the nature of the flood defence, its location and whether it had any negative effects. The Agency would then seek planning permission from the local council, depending on the type of flood defence being built.

Post-disaster recovery and rehabilitation processes

HFA Core Indicator 4.5 : Disaster risk reduction measures are integrated into post-disaster recovery and rehabilitation processes

In response to the need for information on preparing for and undertaking recovery following emergencies, the Cabinet Office published the National Recovery Guidance, on the Cabinet Office website gov.uk. The guidance provides a single point of reference for local responders dealing with the recovery phase of an emergency, and can be used at all levels of government.

Guidance on specific disasters has also been developed, such as the UK Recovery Handbook from chemical accidents, published by the Health Protection Agency.

Usually, a lead government department in England takes care of the recovery phase. However, the Department for Communities and Local Government will provide preliminary support to the Strategic Co-ordination Group/Recovery Co-ordination Group before handing over to the lead government department, if DCLG is not the lead department for recovery from the particular incident.

Lessons-learnt exercises are looking at existing best practices in order to 'build back better' and not recreate risk and the recurrence of similar disasters.

Procedures are in place to integrate disaster risk reduction measures into strategies, plans and programmes

HFA Core Indicator 4.6 : Procedures are in place to assess the disaster risk impacts of major development projects, especially infrastructure

The UK Government adopted in 2010 a Strategy for national infrastructure as a first step towards providing a more integrated approach to infrastructure development across the five sectors and networks (energy, transport, water, waste and communications). As a next step, a national infrastructure framework will be created which will provide the vision of the qualities and role that the UK's infrastructure should aim to develop and sustain over the next 50 years. Up to 2015, the investments in the UK on water resources (for example, rivers, reservoirs and dams, flood and coastal defences), hazardous waste treatment, energy, transport and communication are estimated to be approximately £195 billion (€228 billion[10]). The new infrastructure framework will play a key role in considering the new types of risk, particularly during the construction phase of projects, and ensure that all future investments are climate and disaster resilient.

In addition, climate change adaptation has been the main driver for integration of disaster risk reduction into each of the sectors vulnerable to climate change (for example, environment, infrastructure, agriculture, health and business, etc.) for which a specific planning framework has been adopted. Furthermore, the Environment Agency is applying a number of regulatory and permit procedures, to be followed by private operators, which aim to ensure compliance with minimum requirements and risk management in their planning and operation.

[10]Based on the sterling/euro exchange rate as of 21 April 2013.

Assessment and recommendations on HFA Priority 4

This general assessment on HFA Priority 4 builds on the specific findings for the relevant HFA core indicators. It highlights good practices that were identified in the United Kingdom and may be shared with other countries. It also discusses areas for improvement, leading to the formulation of six core recommendations, highlighted below

Good practices

The National Adaptation Programme, based on the Climate Change Risk Assessment, is an efficient tool to mainstream adaptation to climate change throughout the country, from national to local level. It helps to influence planning to reduce risks accordingly, especially with respect to the risk of flooding, the number one natural risk in the UK.

The UK approach to widely promoting business continuity and resilience in the business sector through both regulation (for critical services and infrastructures) and soft promotion, through the book Business Continuity for Dummies, demonstrates the Government's strong engagement to reduce the impact of disasters on the economy.

Good cooperation between the Government and insurance companies has been established to ensure the largest coverage of citizens by insurance.

Areas for improvement

While long-term development planning is mostly a local responsibility, national regulations or incentives could help frame a more consistent policy approach overall. It could ensure that the appropriate linkages between development planning and risk assessment are made at local level to factor in vulnerability-reduction measures such as land-use policies and building codes.

On-going climate adaptation efforts in the UK would bring more benefits if they were better integrated with the work being done within the local resilience forums.

Despite the partnership between the Government and the insurance sector to ensure a large insurance coverage, social-safety-net policies may be insufficient if large-scale disasters would significantly impact areas where non-insured vulnerable populations are predominant.

Recommendations

The partnership between central government and local levels through the Civil Contingencies Act and the local resilience forums could be expanded to cover not only emergency planning and business continuity but also vulnerability reduction.

At local level, the LRF could be promoted as the main platform for the climate change adaptation efforts, to ensure greater coherence and synergies between risk prevention and adaptation with emergency preparedness and response.

It is recommended to further develop drought-disaster-management policy due to climate change, and take measures to address seismic risks through improved building codes.

How land-use planning takes into account risk assessment at local level should be better monitored and incentives and/or mandatory regulations should be established to ensure vulnerabilities are not growing through inappropriate planning at local level.

Measures to cover the most vulnerable groups need to be more precisely defined, including taking into account the possible future effects of climate change and other trends such as the ageing population.
The Government and the insurance industry should promote greater take-up of insurance by people on lower incomes.

HFA Priority 5 : Strengthen disaster preparedness for effective response at all levels

Policy, technical and institutional capacities and mechanisms

HFA Core Indicator 5.1 : Strong policy, technical and institutional capacities and mechanisms for disaster risk management, with a disaster risk reduction perspective are in place

The Civil Contingencies Act provides a national framework for emergency planning and response.

While most of the incidents are managed by local responders, with specific arrangements in place, the most severe emergencies require central government coordination.

The 2004 Civil Contingencies Act[11] provides for three broad levels of emergency which require central government engagement :

- a significant emergency (Level 1) which requires central government support but not collective central government response;
- a serious emergency (Level 2) which requires central governmental response coordinated by the Cabinet Office Briefing Room; and
- a catastrophic emergency (Level 3) which requires the use of emergency powers.

The Government has also developed eight guiding principles to capture the essential characteristics of an effective emergency response which should be applied in the management of any emergency, including preparedness, continuity, subsidiarity, direction, integration, communication, cooperation and anticipation.

For the majority of emergencies requiring response at national level, a pre-nominated department is responsible for both planning for, and activation of, central government arrangements.

If there is a large-scale emergency, the Government may offer additional support to localities to help them and their communities to recover from an emergency. Usually, there is a lead government department that takes care of the recovery phase. However, the Department for Communities and Local Government will provide preliminary support to the Strategic Co-ordinating Group/Recovery Co-ordinating Group.

In England, the Resilience and Emergencies Division[12] of the Department for Communities and Local Government is responsible for the interface between national- and local-level emergency planning, response and, in many cases, recovery as well. The resilience advisors work directly with the LRFs as they develop local emergency plans, taking into account national-planning assumptions. In the devolved areas, this falls to the Devolved Assemblies.

The role of RED is, among other things, to enable resilient localities, to ensure local preparedness for emergencies, to support local response and recovery efforts, and to provide government support when emergencies occur. For all types of emergency, RED provides local-situation reporting to the lead government department and/or Cabinet Office/COBR.

The Act also defines the obligations of Category 1 (police, fire, ambulance, local authorities, major hospitals and coastguard) and Category 2 (utility services such as water, energy and telecommunication companies) responders, assigning to them various obligations during an emergency. Category 1 responders are required to develop emergency plans.

Specific arrangements are also developed by the private sector. Utility companies (Category 2 responders) have statutory duties to respond to emergencies and to participate in local resilience forums and in local risk management and planning. They have also developed 'mutual aid' agreements. Other companies not identified as Category 2 responders are developing continuity plans and are signing Memorandums of Understanding in order to help each other in times of emergencies. Government and businesses together develop sector resilience plans.

[11]http://www.legislation.gov.uk/ukpga/2004/36/contents
[12]http://www.cabinetoffice.gov.uk/content/emergency-response-regional-arrangements

Disaster preparedness plans and contingency plans

HFA Core Indicator 5.2 : Disaster preparedness plans and contingency plans are in place at all administrative levels, and regular training drills and rehearsals are held to test and develop disaster-response programmes

The Civil Contingencies Act Regulations require Category 1 responders to include provision for the carrying out of exercises and for the training of staff in emergency plans. Similar requirements for exercising and training apply to business-continuity plans.

The Capabilities Programme[13] provides central direction and coordination with respect to preparedness as well as training under the national exercise programme. This work is underpinned by annual planning assumptions based on the National Risk Assessment that are used to identify and prioritize the resources and the needs for preparedness and response.

The Government has in place a coordinated cross-governmental exercise programme. A cross-government programme of training has also been developed[14] to equip people with the knowledge, skills and awareness necessary for their role in crisis management at the national strategic level.

The programme is designed to test rigorously the concept of operations from the coordinated central response through the range of lead government department responsibilities and the involvement of the regional and local responders. In addition, local authorities and local emergency services develop their own programmes of exercises to test capabilities and arrangements at local or multi-area level. Exercise Watermark[15], funded by the EU, was highlighted as a particularly good example of a nation-wide exercise with significant involvement from the local resilience forums and other community organisations that mobilised the whole country. Several exercises organised within the UK have also tested the EU civil protection arrangements and host-nation support.

Training is ensured through the Emergency Planning College[16], within the Civil Contingencies Secretariat, which provides emergency planning and crisis-management training including real-time simulation exercises. The college aims to develop the key skills and awareness needed in order to improve the capability of all levels of government, the wider public sector, and the private and voluntary sectors to prepare for, respond to, and manage potential crises[17].

Capacity development is also sustained through the training of volunteers for response. When responding to an incident, whether local or national, volunteers will be providing support to a statutory authority. A number of established organisations provide a range of services, including the Women's Royal Voluntary Service, the British Red Cross, St. John Ambulance and Raynet (The Radio Amateurs' Emergency Network). At a local and regional level, in order to influence national, sub-national and local planning, groups bringing together planners, the voluntary sector and the lead government departments have also been set up to collaborate on efforts to prepare for major risks. In Scotland, voluntary organisations are routinely represented at local level and at national level on a sub-committee of the National Advisory Group (the Resilience Advisory Board for Scotland).

The EU civil protection exercises and exchange of experts programme have also benefited the UK, including Dutch expert advice on flooding.

Financial reserves and contingency mechanisms

HFA Core Indicator 5.3 : Financial reserves and contingency mechanisms are in place to support effective response and recovery when required

In the event of a major disaster, local authorities, government departments and the Treasury have contingency funds available for immediate response costs for specific incidents. For example, DCLG operates the 'Bellwin' scheme, an emergency financial assistance scheme to assist local authorities in England in covering non-insurable costs they incur as a result of an immediate response to safeguard life or property in an emergency event. This has been activated recently, primarily for floods. The Bellwin scheme does not apply in the recovery phase. The other devolved areas operate different schemes (for example, Wales operates the Emergency Financial Assistance Scheme).

[13]http://www.cabinetoffice.gov.uk/content/capabilities-programme
[14]Central Government Emergency Response Training (CGERT) http://www.cabinetoffice.gov.uk/content/central-government-emergency-response-training-cgert
[15]http://www.defra.gov.uk/publications/2011/10/31/pb13673-exercise-watermark/
[16]http://www.epcollege.com/epc/home/
[17]http://www.epcollege.com/epc/about-us/

After the 2007 floods, the Government put together, for the first time, a financial package to assist affected local authorities with the cost of recovery: if there is a large-scale emergency, the Government decides if additional support is needed for localities to help them recover. However, there are no recovery funds in place, run by either the Government or local authorities, to cover damages incurred by private individuals or companies.

Information exchanges relevant during hazard events and disasters, and to undertake post-event reviews

HFA Core Indicator 5.4 : Procedures are in place to exchange relevant information during hazard events and disasters, and to undertake post-event reviews

The UK disaster preparedness system has clear functioning strategies for communication and information coordination during an emergency. According to the Civil Contingencies Act, Category 1 responders are required to make the public aware of the risks of emergencies and warn the public that an emergency has occurred, or is about to occur.

All information is coordinated by the Cabinet Office before being disseminated to national and then local levels. Local stakeholders then relay the information to the general public. Each government department also has its own information system; however, public information from each department is firstly coordinated by the Cabinet Office in order to ensure consistency and correctness of the messages sent out to the public.

In addition, many organisations are building effective networks of expertise to ensure that they are more prepared to deliver an effective response. For example, the private and public water companies from Scotland and Northern Ireland have collaborated in order to produce information packages to the public.

Procedures are also in place for reviews and for learning lessons.

Post-disaster event reviews, including recommendations, are being undertaken at local level (for example, 'Staffordshire Prepared' on the July 2012 flooding). However, for smaller-scale emergencies involving other risks at local level, the post-disaster reviews are not systematically integrated into the planning and recovery process and lessons learnt translated into policy-making to improve the existing operating procedures.

At national level, learning exercises have been undertaken in order to draw lessons from past events, including the Newton Review, aimed at drawing lessons from the Buncefield accident (involving an explosion and fires at the Buncefield oil storage depot in December 2005), and the Pitt Review, aimed at drawing lessons from the 2007 flooding. The Pitt Review, containing 92 recommendations addressed to various authorities (including government, local resilience forums, insurers and the general public) has been followed up by a Government action plan highlighting the Government's response to the review and bi-annual reports on progress. Reports from parliamentary committees on past events have also led to structural changes in the risk-assessment process. They include a report from the House of Commons Science and Technology Committee which examined the use of scientific advice and evidence in emergencies[18], and considered the lack of inclusion of the risk of disruption to aviation brought about by a disaster caused by a natural hazard in the risk assessment (such as the consequences of the ash cloud in April 2010) as an example of the lack of scientific input in the process.

Monitoring tools for the implementation of recommended measures (such as within the health system) have also been set up.

In Scotland, there is a lessons database both at national and local levels. These databases track the progress of lessons identified during incidents or exercises through a process to a point at which they can be deemed to have been 'learned'.

[18]http://www.publications.parliament.uk/pa/cm201011/cmselect/cmsctech/498/498.pdf

Assessment and recommendations on HFA Priority 5

This general assessment on HFA Priority 5 builds on the specific findings for the relevant HFA core indicators. It highlights good practices that were identified in the United Kingdom and may be shared with other countries. It also discusses areas for improvement, leading to the formulation of seven core recommendations, highlighted below.

Good practices

The efficiency of the whole emergency management system relies upon a well-structured organisation and a clear division of responsibilities. There are arrangements in place to ensure that information is shared between the various stakeholders. The Civil Contingencies Act in particular establishes a clear set of roles and responsibilities for local responders.

The system devotes specific attention to business-continuity management, benefitting from the cooperation between public authorities (the civil contingencies secretariat) and business organisations.

Local resilience forums allow local leaders to develop comprehensive and focused approaches toward better preparedness for specific risks. The Lincolnshire Resilience Forum, for example, designed a 'programme for change' to develop hazard and risk assessment, capabilities and capacity, training and exercises, and community resilience communication. This work helped to support a coordinated approach among all LRFs at threat from a coastal inundation on the UK east coast.

The comprehensive review of the 2007 floods (Pitt Review) has led to a detailed action plan, regularly monitored by progress reports, demonstrating the seriousness of thorough post-disaster feedback mechanisms to improve the overall disaster risk management system in the UK.

Areas for improvement

While the Civil Contingency Act provides a good framework for emergency response, its implementation suffers from differences in its application at local level due to its flexible interpretation and the different levels of capacity throughout the country. As a result, the issue of the overall coordination of response activities may arise. In the case of serious events, the review of the Civil Contingencies Act undertaken by the Cabinet Office highlighted that the relationship between Category 1 and 2 responders could be improved, in particular regarding information sharing.

Coordination and cooperation among the network of emergency responders is ensured through command and control mechanisms. While these appear to be efficient for disasters confined within local borders or significant emergencies led by a single department, they may be less effective in case of a major and more complex disaster, as there is no clear and comprehensive overview of the existing capacities at local level that could be rapidly mobilised. Mutual-aid agreements currently exist between responders in neighbouring areas, but they are sometimes overstretching the available response capacities or become inadequate when an emergency scales up beyond the available resources.

The preparedness and response system currently relies primarily on public resources. Drawing further on civil society and community resources would help, with greater engagement of voluntary organisations during emergency situations, particularly at local levels, where their participation in community resilience work is low.

Focusing emergency response toward pre-identified vulnerable groups would help rescue intervention achieve the greatest impact. This would require the provision of such information to first responders.

Recommendations

Enhancing the implementation of risk-management planning may require additional capacity building and financial support as well as increased multi-agency cooperation and set-up of cross-sectoral national planning frameworks.

Exercises and training for high-impact, low-probability events should be developed where the existing emergency response system is tested in practice. Systematic evaluations of the sectoral resilience plans should be conducted.

Contingency planning and exchange of information with neighbouring countries should be improved and more systematic agreements for cooperation used. The local resilience forums should continue to seek more contact and develop more formal relations with voluntary organisations. This could be done directly or through contact with their local voluntary sector coordinating group. This local engagement would help to support and promote cooperation between public services and local voluntary organisations.

A systematic assessment of the implementation of the recommendations on lessons learnt and exercises/ reviews should be undertaken, involving all levels of government and stakeholders. There is a need for a more systematic 'lessons-learnt' mechanism which includes smaller-scale disasters, as well as at local level.

Similarly, further arrangements should be developed to encourage the general public to participate actively in community resilience work and become more active in ensuring its self-preparedness.

A more structured and centralised system for cooperation between the local resilience forums, on the basis of existing mutual-aid agreements, could ensure more secure, easier and faster access for local responders to response capacities in case of need and bring cost-efficiency benefits.

ANNEX : List of Interviewees from 16-26 September 2012

In the course of the Peer Review visits and interviews, the Review Team met with representatives of:

- Associate Member of the Business Continuity Institute (AMBCI)
- British Geological Survey
- British Insurance Brokers' Association
- British Red Cross
- CAFOD (official Catholic aid agency for England and Wales)
- Civil Contingency Secretariat
- CoDRIM (Business Resilience consultancy Company)
- Department for Energy and Climate Change
- Department for Environment, Food and Rural Affairs (Defra)
- Department of Transportation (DFT) (representatives from aviation, rail, local transport and the Chief Scientists Office)
- Electricity Companies: Energy Networks; Western Power Distribution; SSE Energy Supply Limited; National Grid
- Environment Agency
- Essex County Fire and Rescue Service
- Flood Forecasting Centre
- Government Chief Science Adviser
- Health Protection Agency
- Highways Agency
- Joint Emergency Management Service, Lincolnshire and others
- Natural Hazards Centre
- The Scottish Government
- UK's National Weather Service (Met Office), Exeter
- Variety of local resilience planners from around the country
- Water Companies: Water UK; Veolia Water; Wessex Water; Anglian Water; Welsh Water; Scottish Water
- Welsh Government
- World Vision UK

UNISDR Europe
1000 Brussels, Belgium
http://www.unisdr.org/europe

DG Humanitarian Aid and Civil Protection (ECHO)
European Commission
B-1049 Brussels, Belgium
http://ec.europa.eu/echo

OECD
75775 Paris CEDEX 16, France
http://www.oecd.org

UNISDR Europe
1000 Brussels, Belgium
http://www.unisdr.org/europe

DG Humanitarian Aid and Civil Protection (ECHO)
European Commission
B-1049 Brussels, Belgium
http://ec.europa.eu/echo

OECD
75775 Paris CEDEX 16, France
http://www.oecd.org